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Research paper

Liver disease knowledge and acceptability of non-invasive liver fibrosis assessment among people who inject drugs in the drug and alcohol setting: The LiveRLife Study

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ABSTRACT

Background: The aim of this study was to assess factors associated with baseline knowledge of HCV and liver disease, acceptability of transient elastography (TE) assessment (FibroScan®), and willingness and intent to receive HCV treatment among persons with a history of injection drug use participating in a liver health promotion campaign.

Methods: The LiveRLife campaign involved three phases: (1) campaign resource development; (2) campaign resource testing; and (3) campaign implementation. Participants were enrolled in an observational cohort study with recruitment at four clinics – one primary health care facility, two OST clinics, and one medically supervised injecting centre – in Australia between May and October 2014. Participants received educational material, nurse clinical assessment, TE assessment, dried blood spot testing, and completed a knowledge survey.

Results: Of 253 participants (mean age 43 years), 68% were male, 71% had injected in the past month, and 75% self-reported as HCV positive. Median knowledge score was 16/23. In adjusted analysis, less than daily injection (AOR 5.01; 95% CI, 2.64–9.51) and no daily injection in the past month (AOR 3.54; 95% CI, 1.80–6.94) were associated with high knowledge ($\geq$16). TE was the most preferred method both pre- (66%) and post-TE (89%) compared to liver biopsy and blood sample. Eighty-eight percent were 'definitely willing' or 'somewhat willing' to receive HCV treatment, and 56% intended to start treatment in the next 12 months. Approximately 68% had no/mild fibrosis (F0/F1, $\geq$2.5 to $\leq$7.4 kPa), 13% moderate fibrosis (F2, $\geq$7.5 to $\leq$9.4 kPa), 10% severe fibrosis (F3, $\geq$9.5 to $\leq$12.4 kPa), and 9% had cirrhosis (F4, $\geq$12.5 kPa).

Conclusion: Liver disease and HCV knowledge was moderate. High acceptability of TE by PWID provides strong evidence for the inclusion of TE in HCV-related care, and could help to prioritise HCV treatment for those at greatest risk of liver disease progression.

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Introduction

Injecting drug use is the leading risk factor for hepatitis C virus (HCV) infection in most high-income countries (Hajarizadeh, Grebely, & Dore, 2013). Rates of advanced liver disease complications, associated healthcare costs, and liver disease-related mortality among people who inject drugs (PWID) are rising (Grebely & Dore, 2011). However, HCV assessment and treatment uptake among PWID remains exceptionally low (about 1–2% treated per year) (Alavi et al., 2014, 2015; Grebely et al., 2009; Iversen et al., 2014; Mehta et al., 2008).

HCV knowledge is limited among PWID (Doab, Treloar, & Dore, 2005; Norton et al., 2014; Treloar et al., 2011). Higher HCV knowledge has been shown to be associated with a greater likelihood of receiving HCV assessment and treatment (Grebely et al., 2011; Treloar et al., 2011) and PWID identify a lack of HCV knowledge as a primary barrier to seeking treatment (Alavi et al., 2013; Grebely et al., 2008).

PWID currently receiving opioid substitution therapy (OST) typically have poor HCV knowledge and have low rates of assessment and treatment (Alavi et al., 2013; Grebely et al., 2011; Treloar et al., 2011). It is troubling that this low level of knowledge is observed among PWID receiving OST despite the fact that they regularly frequent a healthcare setting and have repeated contact with healthcare providers (Treloar, Hull, Dore, & Grebely, 2012). However, PWID receiving OST still state a high willingness to receive treatment (Treloar et al., 2012), and evidence shows that recurring contact with a healthcare provider is associated with HCV treatment uptake (Mehta et al., 2008).

It appears that in its current form, an OST-only model is unlikely to provide the level of patient-provider engagement necessary to facilitate widespread HCV assessment and treatment (Treloar, Rance, Dore, & Grebely, 2014). Additional research is required to evaluate targeted educational interventions that will not only improve HCV and liver disease knowledge among PWID but also strengthen patient-provider engagement to further increase assessment and treatment uptake.

There are attitudinal as well as knowledge barriers; for example, PWID have identified receiving a liver biopsy as a barrier to HCV assessment and treatment (Doab et al., 2005; Swan et al., 2010). Liver disease assessments via transient elastography (TE) – an ultrasound technique that evaluates the extent of liver damage – provide a non-invasive alternative to accurately measure HCV-related fibrosis (Castéra et al., 2005; Shaheen, Wan, & Myers, 2007). Among street-based PWID in France, TE (FibroScan®) had complete acceptance (100%) and led to treatment uptake for 10% of HCV-positive participants who were previously undiagnosed (Foucher et al., 2009). Hence, TE assessment may facilitate entry into care, particularly among PWID with HCV who state a lack of HCV-related symptoms as a reason to not seek assessment (Treloar et al., 2014).

The LiveRLife study is a liver health promotion campaign designed to enhance liver disease assessments using TE assessment in the drug and alcohol setting among persons with a history of injection drug use. The aims of this study are to assess factors associated with baseline HCV and liver disease knowledge, willingness to receive TE assessment, and willingness and intent to receive HCV treatment.

Methods

Study design

The LiveRLife campaign was comprised of three phases: (1) campaign resource development; (2) campaign resource testing; and (3) campaign implementation. Ethics approval was received from the Human Research Ethics Committee at St Vincent's Hospital Sydney (Australia).

Phase I: campaign resource development

Phase I of the LiveRLife campaign involved message development for LiveRLife resources. The primary aims were to: (1) investigate knowledge and attitudes among PWID regarding liver disease assessment and treatment uptake; and (2) develop evidence-based messaging to facilitate liver disease assessment and treatment uptake. It was also of interest to identify preferred type of resources (e.g. booklet, video) and means of communication for LiveRLife messaging. In August 2012, four focus group discussions were facilitated by JT and a peer support worker from the NSW Users and AIDS Associations (NUAA). Participants were recruited by NUAA through existing peer networks across Sydney, Australia. A total of 27 persons (aged ≥18 years) participated. Each focus group session was approximately one hour, and discussions were audio recorded and transcribed. Thematic analysis was used to identify knowledge gaps, attitudes towards liver disease assessment and treatment, and barriers and motivators to assessment and treatment.

Based on findings from the focus group discussions, the LiveRLife messaging and resources were created with a design agency. Several pilot LiveRLife resources were developed: study recruitment poster, 16-page educational booklet, TE results card, LiveRLife website, and a short film of liver facts and liver disease assessment via TE assessment. All resources were produced in English, and to aid comprehension, the term "FibroScan®" was used in all resources rather than TE.

Phase II: campaign resource testing

In Phase II, four focus group discussions took place in October 2013 with a total of 16 persons (aged ≥18 years) with opioid dependence. Phase II aims were to test the taglines, images, text, logo, design, and messages of Phase I resources for their ability to raise awareness of liver assessment and treatment amongst PWID. Similar to Phase I, the focus group discussions were held in Sydney, Australia, and were facilitated by JT and a NUAA peer worker with subject recruitment by NUAA. Focus group discussions were audio recorded and transcribed. Data was reviewed using thematic analysis. Final revisions to the resources were made with consensus from the Steering Committee.

Phase III: campaign intervention

Study population and design

Phase III of the LiveRLife campaign included enrolment of participants into a prospective observational cohort study. Participants were recruited from four clinics in New South Wales, Australia between May and October 2014. The clinics included one primary health care facility, two OST clinics, and one medically supervised injecting centre. Recruitment posters were displayed in the clinic waiting area the week leading up to the LiveRLife campaign. Participants could sign-up for the study through the LiveRLife website, directly with the clinic manager, or they could text a code word to receive campaign information via Short Message Service (SMS). All posters included a Quick Response (QR) code. Inclusion criteria were age ≥18 years, written informed consent, and history of injection drug use. Exclusion criteria included currently or previously received HCV treatment, received a TE assessment and/or liver biopsy assessment in the previous two years, and pregnancy. Participants received an educational resource package at enrolment following the completion of all